

**DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER PROTECTION BUREAU
Metcalf Building, Helena, Montana 59620
(406) 444-3080**

ENVIRONMENTAL ASSESSMENT (EA)

Division/Bureau: Permitting & Compliance Division, MGWPCS Permits;

Project or Application: Frontier Village Estates Major Subdivision; MTX000206

Description of Project: The permit authorizes the discharge of treated residential-strength wastewater from 119 proposed single residential lots. The proposed development is located approximately three miles north-northwest of Helena in the Helena Valley. It will be on the north side of John G. Mine Road, between Applegate Drive and Montana Avenue. The subdivision will be developed in two phases (i.e., Phase I & II) with separate collection, treatment, and disposal systems for each phase. Each phase will consist of a wastewater collection system that will gravity flow to central community septic tanks arranged in series. From the last septic tank, wastewater will gravity flow to a recirculation tank. Level II wastewater treatment will occur in a recirculating sand filter (RSF). Following treatment, the effluent will flow into a dose tank where it is pressure-dosed to a subsurface drainfield (Outfall 001 and Outfall 002). The average daily flow purposed for the Phase I treatment system is 14,600 gallons per day (gpd) and 9,200 gpd for Phase II. A standard 500-foot ground water mixing zone is requested for each outfall. The location of Outfall 001 (for Phase I) is 46° 41' 41" North Latitude and 112° 02' 03" West Longitude. The location of Outfall 002 (for Phase II) is 46° 41' 29" North Latitude and 112° 02' 03" West Longitude. Discharge is to ground water, which is classified "Class I" by the Montana Groundwater Quality Standards.

Benefits and Purpose of Proposal:

Adequate treatment of residential-strength wastewater before discharging to ground water.

Description and analysis of reasonable alternatives whenever alternatives are reasonably available and prudent to consider:

None

Listing and appropriate evaluation of mitigation, stipulations and other controls enforceable by this or another government agency:

See Statement of Basis

Affected Environment and Effects from the Proposed Project:

<u>Key to Rank</u>	
NA	<i>Not applicable</i>
N	<i>No effects</i>
B	<i>Potentially beneficial effects</i>
A	<i>Potentially adverse effects</i>
M	<i>Corrective action required</i>
P	<i>Additional permits will be required</i>

Rank	Consideration	Remarks
PHYSICAL AND BIOLOGICAL ENVIRONMENT		
N	1. SOIL SUITABILITY, TOPOGRAPHIC AND/OR GEOLOGIC CONSTRAINTS (soil moisture, unstable soils or geologic conditions, steep slopes, erosion potential, subsidence potential, seismic activity)	Discharge will increase moisture in the unsaturated zone. There are no known unique geological features at the site. There is no indication that the site chosen for the wastewater system will become unstable due to construction and proper operation of the system.

N	2.	HAZARDOUS FACILITIES (power lines, hazardous waste sites, distances from explosive and flammable hazards including chemical/petroleum storage tanks, underground fuel storage tanks and related facilities such as natural gas storage facilities and propane tanks)	
N	3.	AIR QUALITY (effects to or from project, dust, odors, emissions)	No significant impacts have been determined.
N	4.	GROUNDWATER RESOURCES & AQUIFERS (quality/nondegradation, quantity/reliability, distribution, uses/rights, number of aquifers, mixing zones)	There will be no significant degradation outside of the mixing zones for Outfall 001 or Outfall 002 (see Statement of Basis for details and calculations).
N	5.	SURFACE WATER RESOURCES (quality/nondegradation, quantity/reliability, distribution, uses/rights, storm water controls, source of community supply, community treatment, mixing zones)	The nearest downgradient surface water from outfall 001 and 002 is Silver Creek. This stream is approximately 7,000 feet from the proposed subsurface drainfield. Silver Creek is approximately 10,324 feet southeast of the proposed Phase I drainfield area and 9,650 feet southeast of the proposed Phase II drainfield area, paralleling the direction of ground water flow (S62°E). Impacts to surface waters were determined non-significant (see Statement of Basis for details and calculations).
N	6.	VEGETATION AND WILDLIFE SPECIES AND HABITATS, INCLUDING FISHERIES AND AQUATIC RESOURCES (threatened, endangered, sensitive species, prime habitat, population stability, potential for human wildlife conflicts, effectiveness of post-disturbance plans)	
N	7.	UNIQUE, ENDANGERED, FRAGILE, OR LIMITED ENVIRONMENTAL RESOURCES (biologic, topographic, wetlands (within one mile), floodplains (within one mile), scenic rivers, natural resource areas, etc.)	There are no delineated flood plains associated with Silver Creek or Tenmile Creek in the area of this proposed development.
N	8.	LAND USE (waste disposal, agricultural lands [grazing, cropland, forest lands, prime farmland], recreational lands [waterways, parks, playgrounds, open space, federal lands], access, commercial and industrial facilities [production & activity, growth or decline], growth, land-use change, development activity)	The land is vacant rangeland that consists of native grasses, alfalfa, and weeds. Residential properties are to the north and northwest. The Helena Valley Irrigation Canal is 1,800 feet to 2,300 feet northwest (hydraulically upgradient) of the proposed drainfield areas (Outfall 001 and 002, respectively).
N	9.	HISTORICAL, CULTURAL, & ARCHEOLOGICAL (sites, facilities, uniqueness, diversity)	Should cultural materials be inadvertently discovered the permittee should contact the State Historical Preservation office so the site may be investigated.
N	10.	AESTHETICS (visual quality, nuisances, odors, noise)	A series of two central community septic tanks will serve each of the two phases of the development. The two recirculating sand filter treatment systems will discharge effluent from outfall 001 and 002 to the subsurface and will not be visible and will not create aesthetic issues.
N	11.	DEMANDS ON OR CHANGES IN ENVIRONMENTAL RESOURCES INCLUDING LAND, WATER, AIR, OR ENERGY USE (need for new or upgraded energy sources, potential for recycling, etc.) {See (4), (5), and (8).}	Potable water will be provided via two (8-inch diameter) onsite community supply wells that will be completed in the deeper (170 feet) portion of the valley-fill aquifer. These wells will be located in the north-central portion of the development in Lot #75.

Rank	Consideration	Remarks
IMPACTS ON THE HUMAN POPULATION		
NA	12. CHANGES IN DEMOGRAPHIC CHARACTERISTICS (population quantity, distribution and density, rate of change)	The project is for new residential development.
N	13. GENERAL HOUSING CONDITIONS (quality, quantity and affordability)	Phase I will consist of 73 three-bedroom single-family residences and Phase II will consist of 46 three-bedroom single-family residences.
NA	14. POTENTIAL FOR DISPLACEMENT OR RELOCATION OF BUSINESS OR RESIDENTS	
N	15. PUBLIC HEALTH AND SAFETY (medical services and facilities, police, fire protection and hazards [see (2)], emergency medical services [see (8), LAND USE for waste disposal])	
N	16. LOCAL EMPLOYMENT AND INCOME PATTERNS (quantity and distribution of employment, economic impact)	
NA	17. LOCAL AND STATE TAX BASE AND REVENUES	
NA	18. EFFECTS ON SOCIAL STRUCTURES AND MORES (social conventions/standards of social conduct), DEMANDS ON SOCIAL SERVICES (law enforcement, educational facilities [libraries, schools, colleges, universities], welfare, etc.)	
N	19. TRANSPORTATION NETWORK (condition and use of roads, traffic flow conflicts, rail, airport compatibility, etc.)	
N	20. CONSISTENCY WITH LOCAL ORDINANCES, RESOLUTIONS, OR PLANS (conformance with local comprehensive plans, zoning or capital improvement plans)	
NA	21. REGULATORY RESTRICTIONS ON PRIVATE PROPERTY RIGHTS (<i>Are we regulating pursuant to a police power? Does the Agency action restrict the use of the property beyond the minimum necessary to achieve compliance with the Act? What are the costs of such additional restrictions resulting from proposed permit conditions? Are there other, less restrictive ways of achieving the same goal? See your assigned legal counsel for assistance preparing this section. [See the Private Property Assessment Act checklist accompanying this permit for details.]</i>)	

Other groups or governmental agencies contacted or which may have overlapping jurisdiction:
Public Water Supply, Subdivisions Bureau

Public Involvement:
Thirty-day public comment period

Individuals or groups contributing to this EA:
Lewis and Clark County

Summary of Issues:
See Statement of Basis

Summary of Potential Effects:
See Statement of Basis

Cumulative Effects:
There are no unresolved analyses for cumulative effects.

Recommendation:
Issue Ground Water Discharge permit

Recommendation for Further Environmental Analysis:

☐ Prepare an EIS

☐ Prepare a more detailed EA

☒ No further analysis

EA prepared by: Pat Potts

Date: March 25, 2008

Bureau Check-off

AWMB _____
IEMB _____

CSB _____
WPB _____

EMB _____
Other _____

Approved by:

Bonnie Lovelace, Chief
Water Protection Bureau
Permitting & Compliance Division

(Print name and title)

(Signature)

(Date)